Method and System for Spatially Compositing Digital Video Images With a Tile Pattern Library

Abstract

A method and system for spatially compositing digital video images with a tile pattern library. Spatial compositing uses a graphics pipeline to render a portion (tile) of each overall frame of digital video images. This reduces the amount of data that each processor must act on and increases the rate at which an overall frame is rendered. Optimization of spatial compositing depends on balancing the processing load among the different pipelines. The processing load typically is a direct function of the size of a given tile and an inverse function of the rendering complexity for objects within this tile. Load balancing strives to measure these variables and adjust, from frame to frame, the number, sizes, and positions of the tiles. The cost of this approach is the necessity to communicate, in conjunction with each frame, the number, sizes, and positions of the tiles. A tile pattern library is a collection of sample compositing windows of various shapes each of which is decomposed into tiles of various shapes and positions. Associated with each sample in the tile pattern library is an index code that can be used to communicate the overall pattern. This reduces the amount of data needed to convey the parameters that define each tile.

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